January 7, 2009

Water Resources Conservation Advisory Council
Report on Capacity and Actual Withdrawals

Charge: Section 32803(4)(a) of the Natural Resources Environmental Protection Act requires the Water Resources Conservation Advisory Council (WRCAC) to "not later than 6 months after the effective date of the amendatory act that added this subdivision, study and make recommendations…on how the assessment tool could be updated to reconcile differences between baseline capacity and actual withdrawal amounts to assure the accuracy of the assessment tool's determinations."

Problem Statement: Today's water use assessment tool—and more broadly, the underlying water withdrawal assessment process—is built upon the predicted effect of new and increased withdrawals on stream flow. The assessment process estimates the impact of a future water use on a stream. The models that form the base of the process account for the effect of an existing water withdrawal in the affected stream's index flow determination. However, existing uses are "grandfathered" for their full withdrawal capacity even though only the amount of their current use is reflected in an index flow determination. An increase in these grandfathered withdrawals over current use would cause a reduction in stream flow that would not be accounted for in the assessment process. Thus, such an increase, alone or in combination with new withdrawals, may cause an adverse resource impact. As a result, the current assessment process could, under certain circumstances, underestimate predicted future impacts.

On the other hand, there is a corollary capacity/use issue for new withdrawals that could have the opposite effect. For new uses, the current system accounts for the entire capacity of a new withdrawal, assuming the immediate corresponding reduction in streamflow. However, it is uncertain whether withdrawal to full capacity—and hence reduction in streamflow—will ever occur and, if so, when. Thus, the assessment process could overestimate potential future impacts, precluding new withdrawals by other users, unless it can consider and reduce the uncertainty surrounding the timing and extent of the streamflow reduction caused by a new withdrawal.

Recommendation: The WRCAC recognizes the above as conceptual issues within the structure of the water withdrawal assessment process. However, we do not yet have sufficient information concerning withdrawals or experience with the assessment process to evaluate the scope or magnitude of those issues. That is, we cannot yet assess where and how frequently these issues will have real world impacts, or how large these impacts will be. As a result, the WRCAC suggests the following plan of action:

1. The WRCAC should evaluate and report on necessary improvements to the data systems underlying the assessment process. The Departments of Environmental Quality (DEQ), Agriculture (MDA), and Natural Resources (DNR) are reviewing these data systems and intend to update them to the extent possible within available resources. These efforts include:

    - Data integration between the MDA and DEQ, so that information gathered provides an improved basis for future decisions under the water assessment process.

- Reviewing existing registration and reporting information to identify data gaps that need to be filled to fully understand and track registered capacity and reported use. Some of these gaps include unreported water uses, the lack of precise surface water withdrawal location data, insufficient return- flow data, an absence of a standardized calculation of withdrawal capacity/use, and a means to capture the discontinuation of registered withdrawals so that they can be accounted for by the assessment process.

2. The WRCAC recommends that the statute be amended to have water users more accurately report the location of surface water withdrawals. Specifically, surface water withdrawal location information should be to the same standard as for groundwater withdrawals in Sec. 32707(1)(e), the latitude and longitude with the accuracy of the reported location data within 25 feet. The WRCAC also recommends that certain surface water withdrawals that are made at various locations in the same sub-watershed (consistent with those defined in the water withdrawal assessment process) should report a single location.

3. The WRCAC recommends improving understanding of the grandfathered capacity/use issue by studying specific areas. These "pilot areas" should be selected based on the potential that expanded grandfathered use will impact the resource (e.g., a cold-transitional stream with multiple withdrawals), quality of existing data, and other appropriate factors. The effort could focus on identifying and filling data gaps, estimating the effect of changes in grandfathered withdrawals and new withdrawals on stream flow, and identifying opportunities for data management, tracking, and other solutions to resolve the issue.

4. The WRCAC should monitor how capacity/use issues are addressed under current law including, but not limited to:
   a) DEQ use of existing authority to implement the site-specific review process and its ability to conditionally authorize a withdrawal.
   b) Water user committee activities that may successfully moderate the effects of capacity/use discrepancies by addressing problems arising at specific sites.

5. The WRCAC will address these recommendations in subsequent reports.